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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,854	01/26/2001	Paul R. Nemeth	99CR065/KE	7848

7590 06/25/2003  
ROCKWELL COLLINS, INC.  
Attention: Kyle Eppele  
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M/S 124-323  
Cedar Rapids, IA 52498

EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT PAPER NUMBER

2871

DATE MAILED: 06/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/770,854

Applicant(s)

NEMETH, PAUL R.

Examiner

Tarifur R Chowdhury

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishihara, USPAT 5,142,386.**

3. Ishihara discloses (col. 2, lines 17-25; col. 4, line 53- col. 5, line 5) and shows in Fig.3, a method for repairing defects in an active matrix liquid crystal display, the method comprising:

- locating a defective pixel in the liquid crystal display;
- focusing a laser on a portion of a color filter corresponding to the defective pixel; and
- at least partially ablating the portion of the color filter corresponding to the defective pixel using the laser to change the color of the color filter into gray which is at a mid-point tone between white and black (applicant's discoloring the color filter).

As to the limitation of not damaging the glass substrate associated with the color filter, Ishihara is related to discoloring the color filter that is defective not the glass substrate and thus the glass substrate remain undamaged.

As to the limitations of applying power to the liquid crystal display and

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backlighting the display while power is applied, is common and known in the art and thus would have been obvious to avail a proven technology.

As to using the method for repairing defect in a normally white liquid crystal display is considered as intended use and thus would have been obvious.

As to the limitation of setting the level of discoloration in accordance to an original color of the defective pixel, since it is common and known in the art that the blue color requires much less intensity than the green and red colors and thus would have been avail a proven technique.

Further, Ishihara also discloses about discoloring the filter substrate side of the color filter.

Accordingly, claims 1, 2, 6, 12, 13 and 15-19 would have been obvious.

As to claims 3 and 14, using a color vision system to locate defective pixel is common and known in the art and thus would have been obvious to avail a proven system.

As to claim 4, using a controller to control the laser is common and known in the art and thus would have been obvious to avail a proven technology.

As to claim 7, repeating the steps of locating, focusing and ablating to correct plurality of defects on the liquid crystal display is considered as intended use and thus would have been obvious.

As to claim 8, using a motion control system to control the motion of the laser is common and known in the art and thus would have been obvious to avail a proven technology.

As to claims 5 and 9, typically a laser is focused in the visible wavelength range.

As to claims 10 and 20, typically a vision system includes a camera equipped with automatic focus and automatic zoom that scans the LCD.

As to claim 11, using a mask to block laser light from ablating portions of the color filter associated with non-defective pixel is common and known in the art and thus would have been obvious to optimize performance.

#### ***Response to Arguments***

4. Applicant's arguments filed on 04/15/03 have been fully considered but they are not persuasive.

In response to applicant's argument that Ishihara does not realize the more delicate ablation technique, which merely discolors the color filter and instead burns and destroys the color filter and the structure near it, it is respectfully pointed out to applicant that Ishihara discloses in col. 2, lines 17-25 that by using a laser light into the color filter of the liquid crystal display element the color of the color filter is changed (discolored) into gray. Ishihara also discloses in col. 5, lines 1-5 that the blackening/burning of the color filter cause the defective pixel to have a gray tone. Further, when the color of the color filter is changed into gray it implies that the color of the color filter is discolored. Therefore, it is clear from Ishihara that the laser (ablation means) of Ishihara is indeed used to discolor the color filter. Further, since Ishihara only discloses about discoloring the color filter, the glass substrate where the color filter is formed remains undamaged.

As to applicant's argument that Ishihara even recommends destroying the liquid crystal cell, it is respectfully pointed out to applicant that Ishihara discloses that such an

approach is an alternative approach to correct defect and was not relied upon to reject the claims and thus is not relevant.

Applicant's argument regarding the reference Toshiharu seems to be persuasive and thus withdrawn. It appears that Toshiharu talks about removing the defective pixel and is silent about discoloring and thus does not teach or suggest the claimed invention as amended.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

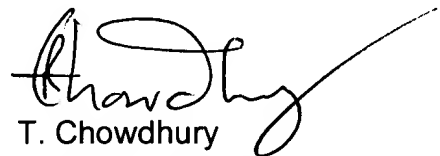
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R Chowdhury whose telephone number is (703) 308-4115. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7005 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.



T. Chowdhury  
Primary Examiner  
Technology Center 2800

TRC  
June 17, 2003